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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/707,242

11/30/2003

Igor Touzov

1241

34185

7590

03/16/2006

IGOR V TOUZOV

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CARY, NC 27519

EXAMINER

PAK, SUNG H

ART UNIT

PAPER NUMBER

2874

DATE MAILED: 03/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/707,242

Applicant(s)

TOUZOV, IGOR

Examiner

Sung H. Pak

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 and 26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18, 22-24 and 26 is/are rejected.
- 7) ☒ Claim(s) 19-21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

Applicant's amendment filed on 12/27/2005 has been entered. It is noted that insertion and deletion markings (i.e. underline and strike-through) are used incorrectly throughout the amendment. The markings should be used to indicate changes in claim language over the immediate prior version of the claim language NOT over the original claim language initially filed with the application. Please refer to MPEP 714 and 37 CFR 1.121 (assessable through www.uspto.gov).

Applicant's amendment effectively broadens the scope of the pending claims. For example, the independent claim 1 now recites "... waveguide [that] allows unidimensional or two- or three- dimensional propagation of a distortions, and the distortion type is not restricted and may be set to electrical, mechanical, optical, magnetic or other..." In addition, dependent claims are amended to recite "distortions" instead of "pulses" recited in the previous claim language.

The examiner respectfully submits that such broadening of the claim language does not overcome the prior art rejection because what is taught in prior art is now clearly a 'subset' of what is claimed in the application. In other words, the transmission of laser pulses along optical waveguides disclosed by the prior art is fully within the scope of what is claimed. This will be discussed in more detail in Response to Arguments section below.

Claim 18 is amended and rewritten in independent form. However, the allowability of claim 18 indicated in the previous Office Action depends on the each and every limitations of claim 18 AND each and every limitations of the BASE claim as well as any INTERVENING claims. Please refer to the previous Office Action at page 4. In other words, in order for claim

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18 to be allowable, it must be amended to recite all the limitations of claim 1, all the limitations of claim 15, and all the limitations of claim 18.

Response to Arguments

Applicant's arguments for patentability presented in the amendment filed 12/27/2005 have been carefully studied by the examiner. However, the arguments are not convincing and the previous ground of rejection is maintained by the examiner.

The examiner respectfully submits that the alleged differences between the disclosed invention of the present application and the prior art applied in the Office Action are NOT material to the claim rejection, because the patentability evaluation depends on whether the CLAIMED limitations are anticipated or rendered obvious by what is taught in the prior art. Patentability determinations are NOT made based on the comparison between the disclosure of the invention as a whole and the disclosure of the prior art. Please refer to MPEP 2100.

Specifically, it is argued "[m]y invention does not rely on quantum behaviors and ultra short laser pulses" (page 1, paragraph 2). Further it is argued "[t]he light pulses and optical waves can also be utilized but are not essential to for the fundamental nature of the invention" (page 1, paragraph 3).

The examiner respectfully submits that even if the applicant's assertion is true, the structure and features presently claimed by the claim language in the application does not prohibit the use of quantum behavior, ultrashort laser pulses, and optical waves as disclosed in the prior art. Therefore, the aforementioned specifics of the prior art are irrelevant in the

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patentability evaluation of the CLAIMED limitations as they are currently recited in the application.

Further, it is argued “Normandin et al has invented a dedicated method for detecting the location...” (page 1, paragraph 4). In addition, it is argued “[m]y invention is not suited for detection of a particular location or tracing down its variance” (page 1, paragraph 5). Also, it is asserted “Normandin et al has invented methods that are explicitly limited to unidimensional case of optical fiber” (page 2, paragraph 1).

Even if assuming, for the sake of argument, that all of applicant’s assertions are true, the claims are amended to expressly recite, inter alia, “wherein the waveguide allows unidimensional or two- or three- dimensional propagation of distortions...” (claim 1, emphasis added) As such, what is taught in the prior art fully anticipates the CLAIMED limitations of the present application and the prior art rejection is proper. The applicant’s intended use of the claimed device, and the non-claimed features of the invention are not material to the patentability evaluation of the claimed invention.

As discussed in the Response to Amendment section, the claim amendment effectively broadens the scope of what is claimed in the application. While the examiner appreciates the argument that the prior art applied in the Office Action may not disclose everything that is discussed in the specification of the present application, broadening the scope of the claim does NOT overcome the anticipation or obviousness of the claimed invention over the prior art. See MPEP 2100. Instead, the claim limitations should be narrowed (i.e. by adding features of the disclosed invention that are not taught by the prior art) so as to distinguish away from the prior art.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 5, 7, 9, 11, 13, 15-18, 22-24, 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Normandin et al (US Patent 5,375,011) as discussed in the previous office action.

Normandin discloses an optical device with all the limitations set forth in the claims, including: an apparatus comprising a waveguide (Fig. 3), receiving or transmitting domains ('10' Fig. 3); at least one wave generator ('32' Fig. 3); wherein the generator sends pulses of signals into adjacent waveguide (Fig. 3); wherein said domains is presented by continuous distance or continuous area matching shape of the waveguide or collection of discrete receiving or transmitting elements (Fig. 3; Figs. 2a-2d); wherein each domains render nonlinear response with respect to energetic state of the waveguide at immediate geometrical proximity, wherein this location is a physical location of collision of at least two said pulses (column 2 lines 24-35); wherein the pulses are propagating in the waveguide by distinct passes, and fronts of the pulses interfere in a media that reveal nonlinear properties and this location interference uniquely identifies a location within said continuous range (column 2 lines 24-35); wherein said pulses have defined finite length (Fig 3, Figs. 2a-2d); wherein at least one pulse has Gaussian shape (Fig. 3); wherein the interference of said pulses dynamically alter at least one physical properties of the material (alters light transmission properties- Fig. 2a-2d); wherein the waveguide

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additionally coupled with plurality of transducers to query a value of predefined physical property of dynamically selected confined volume of the structure ('14' Fig. 3).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 4, 6, 8, 10, 12, 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Normandin et al (US Patent 5,375,011) as discussed in the previous office action.

Normandin discloses an apparatus with limitations set forth in the claims as discussed above, except it teaches the use of oppositely traveling pulses, instead of pulses propagating in the same direction as claimed in the instant application.

However, inputting pulses with different phase velocities that are traveling in the same direction is well known in the art. This configuration is well known to be advantageous and desirable because it requires only one input port for introducing optical pulses and requires less amount of waveguide reducing possible transmission loss and reducing costs. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the device of Normandin to have pulses propagating in the same direction as claimed in the instant application.

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Allowable Subject Matter

Claims 19-21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of claim 1, claim 15, and claim 18 as previously recited in the application.

The statement of reasons for indicating allowable subject matter was provided in the previous office action.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

This action is a **final rejection** and is intended to close the prosecution of this application. Applicant's reply under 37 CFR 1.113 to this action is limited either to an appeal to

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the Board of Patent Appeals and Interferences or to an amendment complying with the requirements set forth below.

If applicant should desire to appeal any rejection made by the examiner, a Notice of Appeal must be filed within the period for reply identifying the rejected claim or claims appealed. The Notice of Appeal must be accompanied by the required appeal fee.

If applicant should desire to file an amendment, entry of a proposed amendment after final rejection cannot be made as a matter of right unless it merely cancels claims or complies with a formal requirement made earlier. Amendments touching the merits of the application which otherwise might not be proper may be admitted upon a showing a good and sufficient reasons why they are necessary and why they were not presented earlier.

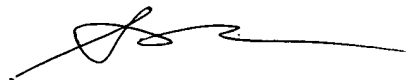
A reply under 37 CFR 1.113 to a final rejection must include the appeal from, or cancellation of, each rejected claim. The filing of an amendment after final rejection, whether or not it is entered, does not stop the running of the statutory period for reply to the final rejection unless the examiner holds the claims to be in condition for allowance. Accordingly, if a Notice of Appeal has not been filed properly within the period for reply, or any extension of this period obtained under either 37 CFR 1.136(a) or (b), the application will become abandoned.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sung H. Pak whose telephone number is (571) 272-2353. The examiner can normally be reached on Monday- Friday, 9AM-5PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571)272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sung H. Pak
Primary Patent Examiner
Art Unit 2874